SECOR

SECOR
INTERNATIONAL
INCORPORATED

www.secor.com

2655 Camino Del Rio N. Suite 302
San Diego, CA 92108
619-296-6195 TEL
619-296-6199 FAX

January 30, 2006

Project No. 08BP.01919.09

County of San Diego, Department of Environmental Health,
Land and Water Quality Division
Well Permit Desk
P.O. Box 129261
San Diego, CA 92112-9261

Attention: Permit Clerk

**Subject: Well Destruction Permit Application and Method Variance Request**
ARCO Facility No. 1919
660 Via de la Valle
Solana Beach, California
SAM Case No. H05166-002
DEH Permit No. LMON103705

On behalf of the Atlantic Richfield Company (Atlantic Richfield), SECOR International Incorporated (SECOR) is requesting a well destruction method variance for several wells under County of San Diego, Department of Environmental Health (DEH) Permit No LMON103705. The permit is for the destruction of 23 groundwater monitoring and remediation wells associated with the subject site (Figure 1). During underground utility clearance by air knifing, three wells, MW-11, MW-17, and MW-20, were observed to be in close proximity to underground utility lines. Another well, MW-19B had utilities marked close to and over the well. SECOR is requesting to destroy these four wells by the pressure-grouting method. In addition, five wells (designate wells RT-1 through RT 5 on Figure 1) are constructed horizontally above the water table. Removal of these structures would greatly disrupt the service station operation and would possibly damage overlying utility lines. Accordingly, pressure-grouting these wells would be the most appropriate destruction method.

This variance to pressure grout vertical wells MW-11, MW-17, MW-19B, and MW-20, and horizontal wells RT- through RT-5 is being requested to reduce the risk to site personnel and potential damage to utilities due to utility proximity to the wells. Justification for this variance request for each well is as follows (please refer to attached photographs):

- SECOR personnel observed an unidentified pipe approximately 5 inches from well MW-11 during borehole clearance by air knifing (Photograph No. 1).
- SECOR personnel observed an approximate 4-inch diameter, unidentified PVC pipe approximately 5 inches from well MW-20 during borehole clearance by air knifing (Photograph No. 2).
- Well MW-17 is located approximately 5 inches from electrical conduit, which SECOR personnel confirmed visually during borehole clearance (Photograph No. 3).
- MW-19B has three separate utilities marked out within approximately 2 feet of the well (Photograph No. 4). Electrical and sewer pipes are marked out within approximately 2

feet of the well, and an SBC utility is marked out less than 4 inches from the well casing. An attempt to expose this utility could result in damage; hence, this was not attempted.

- Horizontal wells RT-1 through RT-5 were installed generally less than four feet below grade, based on observations during clearance of the vertical risers for these wells. The well screens are reported to extend laterally approximately 25 feet from the risers. Excavation to remove these wells would be very disruptive to the service station operation and would increase the potential to damage underground utilities that cross these wells.

Presence of the identified subsurface utilities in such close proximity to the vertical wells and the construction of the horizontal wells present an unacceptable risk if they were to be destroyed using conventional overdrilling methods or to remove the horizontal well screens, as applicable. As such, SECOR is respectfully requesting a variance to allow destruction of wells MW-11, MW-17, MW-19B, MW-20, and RT-1 through RT-5 by the pressure grouting method.

Available boring log/well construction diagrams are attached for reference. SECOR proposes to oversee the following procedures to pressure grout the wells:

- Prior to grouting, groundwater inside the well will be removed to the extent practical, placed in 55-gallon steel drums, and temporarily stored on-site pending disposal.
- For vertical wells MW-11 and MW-19B, casings will be cut below the annular seal to the bottom of the well using a carbide bit that is closed when pushed down into the PVC pipe then opens and punctures the PVC pipe as it is pulled up.
- Casings will not be cut for vertical wells MW-17 and MW-20 due to inaccessibility to these wells with a drill rig (boulder and tree obstructions). Casings for horizontal wells will not be cut as no conventional method is available to cut horizontal casings in-situ.
- A well cap will be placed on top of the casing with an opening for small diameter tremie pipe. A vent will also be included on the well cap for pressure release.
- For vertical wells, the tremie pipe will allow for neat cement grout to be introduced at the bottom of the well. For horizontal wells, the tremie pipe will only extend to the bottom of the vertical riser pipe portion of the well.
- In general, the bottom end of the tremie pipe will remain submerged in the neat cement grout as it is being placed.
- Pressure grouting will be accomplished in one continuous operation, thus preventing "bridging".
- A minimum of 25 pounds per square inch will be maintained for five minutes or until pumping refusal. This will ensure that the neat cement grout fills the filter pack and the borehole wall.

- Waste generated during destruction activities will be contained pending proper disposal.
- Well destruction work will be performed by a California C-57 licensed contractor and supervised by SECOR personnel.

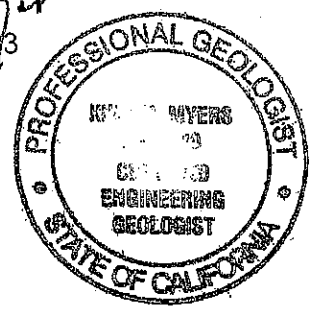
If you have any questions or comments regarding this letter, please contact the undersigned.

Sincerely,

SECOR International Incorporated

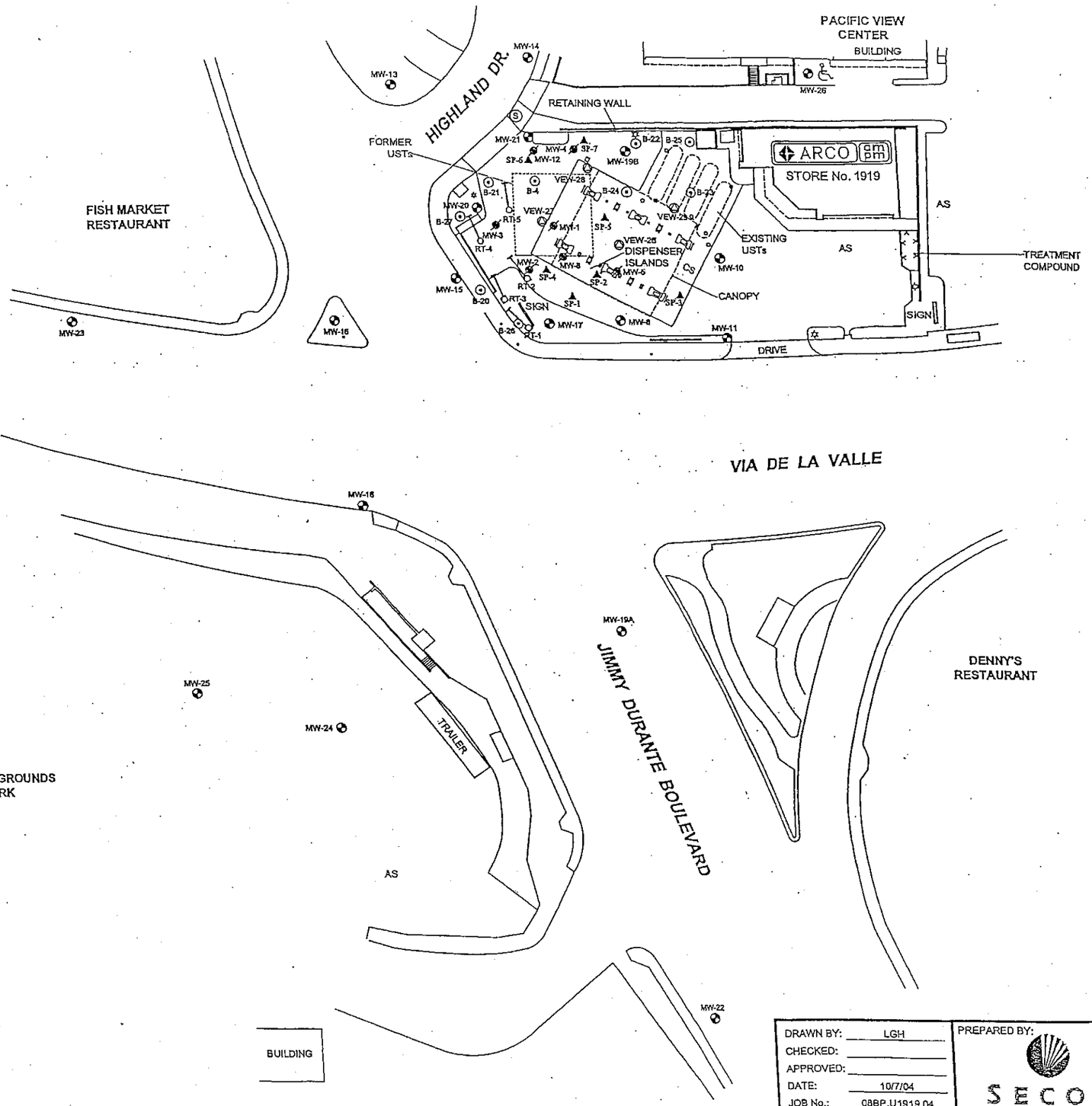
Timothy Kimball
Assistant Geologist

Kurt R. Myers, PG #5683
Senior Geologist




cc: Danny Martinez, SAM
Kyle Christie, Atlantic Richfield Company

Attachments: Well Permit Application
Site Plan (Figure 1)
Photographs
Boring Logs




LEGEND:

| | |
|---|---|
| MW-26 | GROUNDWATER MONITORING WELL |
| MW-12 | DESTROYED MONITORING WELL |
| R-3 | HORIZONTAL VAPOR EXTRACTION TRENCH |
| VEW-29 | VAPOR EXTRACTION WELL |
| SP-6 | SPARGE WELL |
| B-22 | SOIL BOREHOLE |
| S | STORM DRAIN |
| ☼ | LIGHT POLE |
| AS | ASPHALT SURFACE |
| CS | CONCRETE SURFACE |
| USTs | UNDERGROUND STORAGE TANKS |

0 60 120

APPROXIMATE SCALE (FEET)

SOURCE: SOUTHERN CALIFORNIA SURVEY, SEPTEMBER 26, 2003

| | |
|---|---|
| DRAWN BY: | LGH |
| CHECKED: | |
| APPROVED: | |
| DATE: | 10/7/04 |
| JOB No.: | 08BP.U1919.04 |
| CAD FILE: | 1919SP10-04 |

PREPARED BY:

SECOR

2655 Camino del Rio North, Suite 302
San Diego, California

PREPARED FOR:

ARCO FACILITY #1919
660 VIA DE LA VALLE
SOLANA BEACH, CALIFORNIA

FIGURE: 1
SITE PLAN

P:\CAD\ALLF is2004dwgs\Arco 2004\1919-2k4\1919SP10-04.dwg Modified by LHUNTER on Dec 28, 2004 - 8:1Pa

PERMIT #LMON103705
A.P.N. # 298-270-24-00
EST # H05166-002

# COUNTY OF SAN DIEGO
## DEPARTMENT OF ENVIRONMENTAL HEALTH
## LAND AND WATER QUALITY DIVISION
## MONITORING WELL PROGRAM

JAN 9 [illegible] 06

## MONITORING WELL DESTRUCTION PERMIT

SITE NAME: ARCO #1919

SITE ADDRESS: 660 VIA DE LA VALLE, SOLANA BEACH, CA 92075

PERMIT TO: **DESTROY 23 GROUNDWATER MONITORING WELLS**

PERMIT APPROVAL DATE: JANUARY 24, 2006

PERMIT EXPIRES ON: MAY 24, 2006

RESPONSIBLE PARTY: BP WEST COAST PRODUCTS LLC

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**PERMIT CONDITIONS:**

1. **All material within the original borehole, which includes the casing, filterpack and annular seal, must be removed. The borehole must be completely filled with an approved sealing material as specified in Department of Water Resources Bulletin 74-90.**

2. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (**http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html**). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

3. Within 60 days of completing work, submit a well destruction report, including description of the method of destruction, type and volume of materials used (in cubic feet) to the Monitoring Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 5-7.

4. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: M Crystal DATE: 01/24/2006

MARISUE CRYSTAL

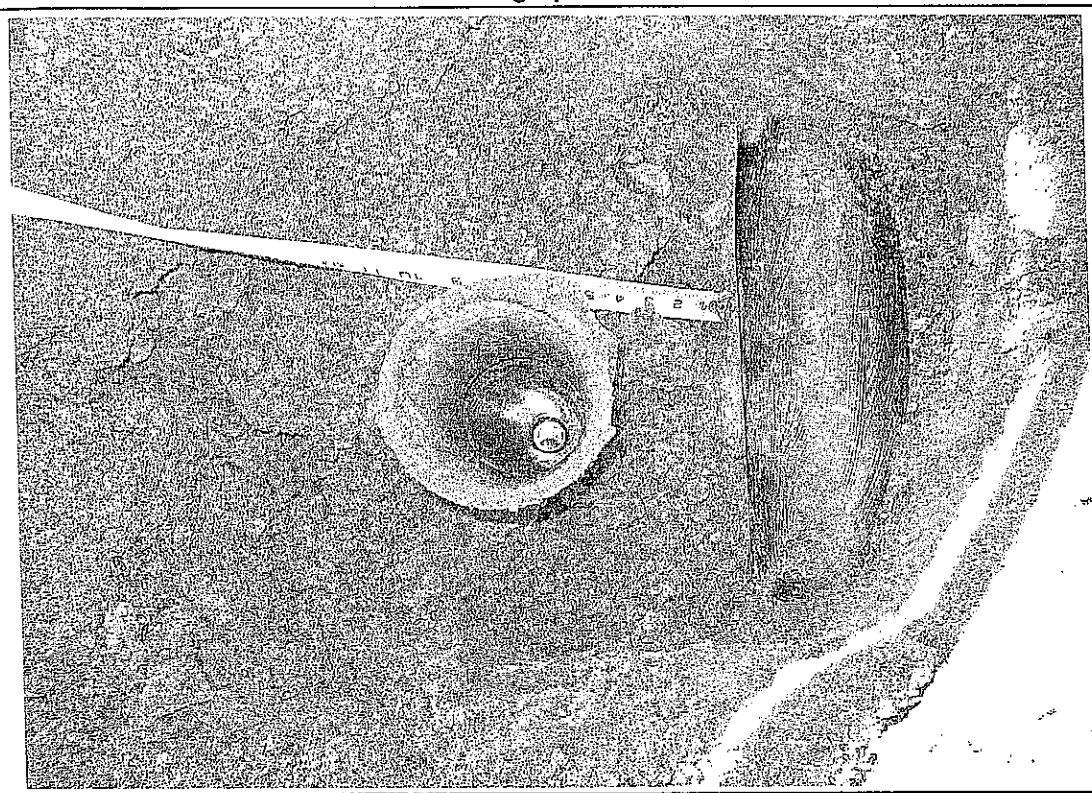
NOTIFIED: V.M. MSG 1/24/06 MSC

DEH:SAM-9075 (3/05)

# SECOR
# PHOTOGRAPHIC RECORD

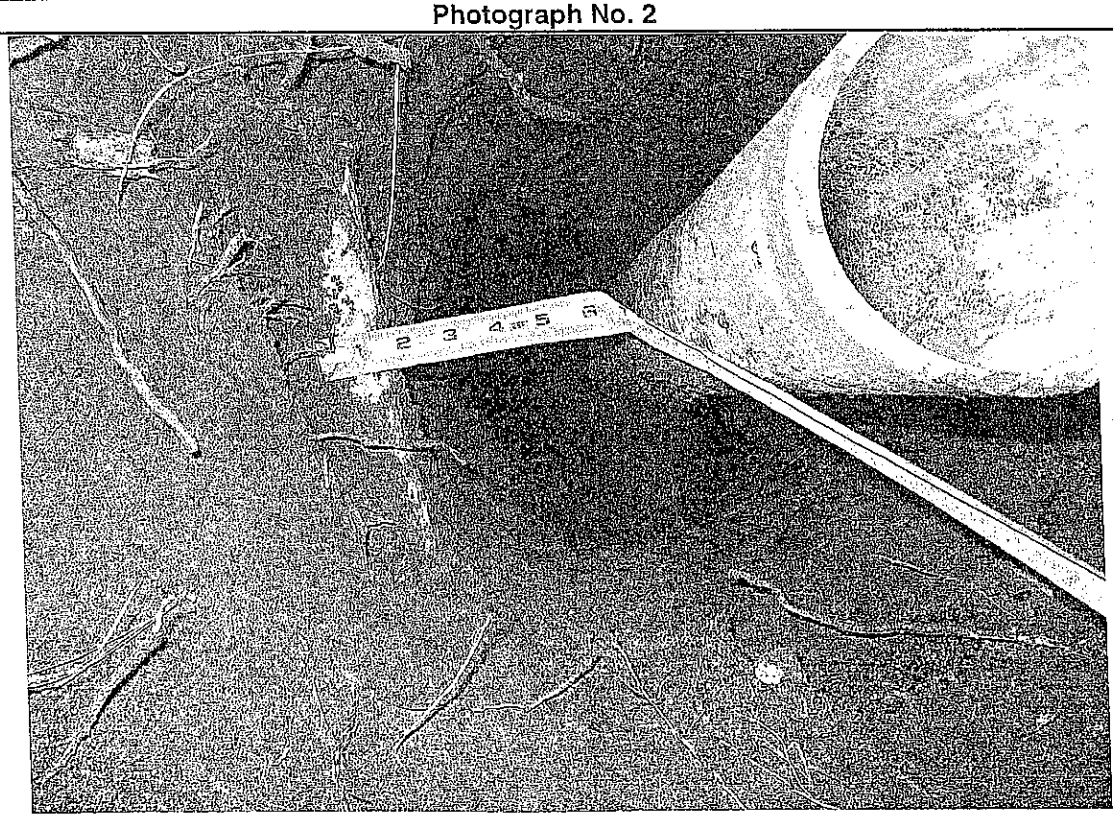
| | | | |
|---|---|---|---|
| **Client:** | Atlantic Richfield | **Job Number:** | 08BP.01919.09 |
| **Subject Name:** | ARCO Facility #1919 | **Location:** | 660 Via de la Valle, Solana Beach, California |
| **Photographer:** | Timothy Kimball | **Date:** | January 30, 2006 |

**Photograph No. 1**



Excavation of MW-11 showing unidentified piping 5" from the well

**Photograph No. 2**

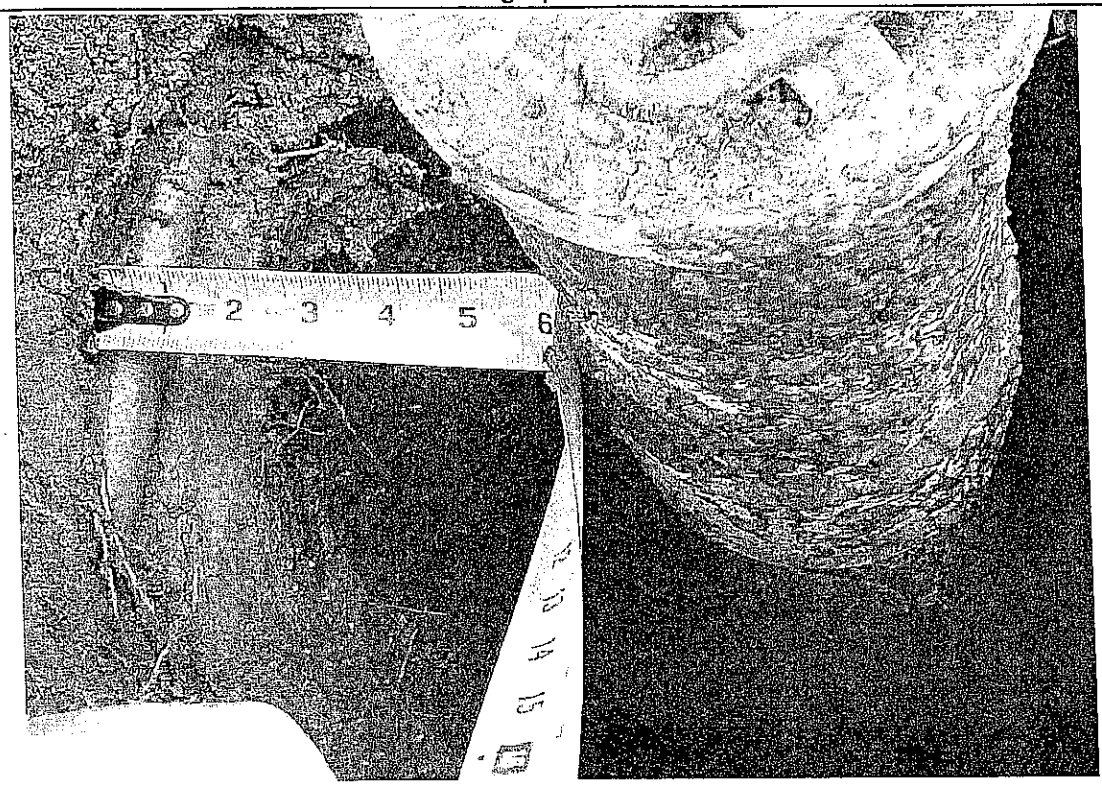


Excavation of MW-20 showing unidentified piping less than 6" from the well

# SECOR
# PHOTOGRAPHIC RECORD

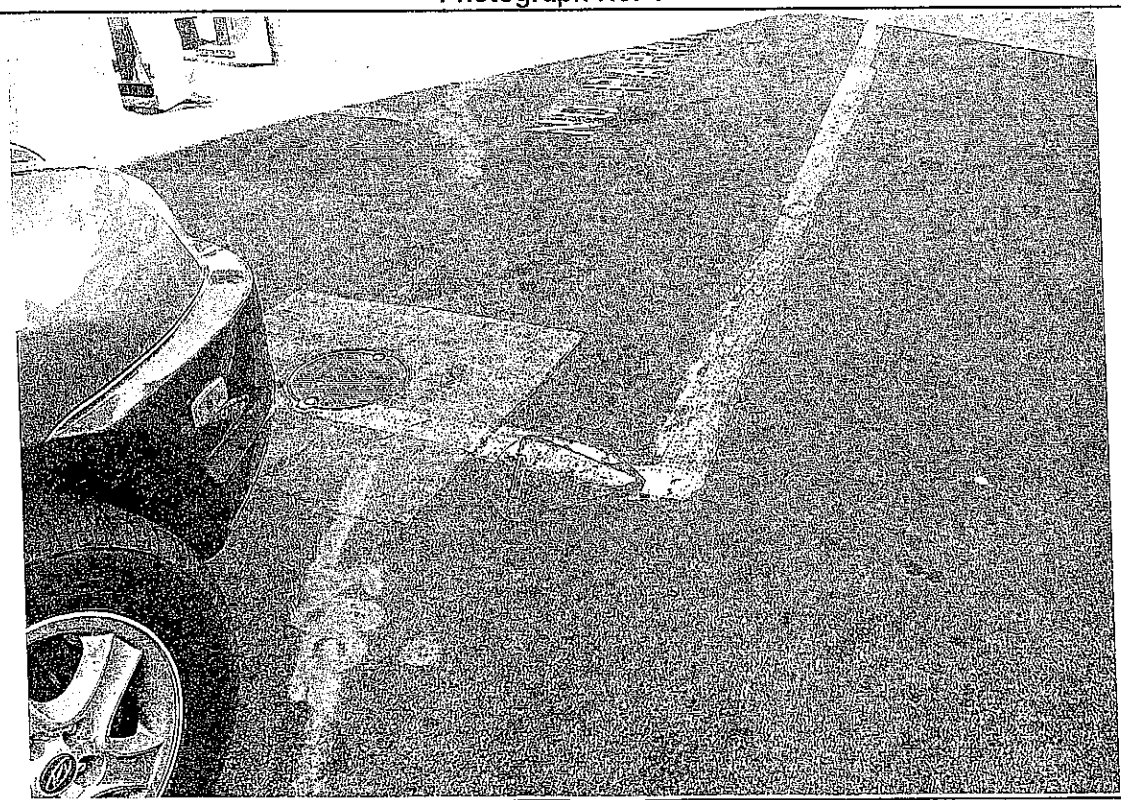
| | | | |
|---|---|---|---|
| **Client:** | Atlantic Richfield | **Job Number:** | 08BP.01919.09 |
| **Subject Name:** | ARCO Facility #1919 | **Location:** | 660 Via de la Valle, Solana Beach, California |
| **Photographer:** | Timothy Kimball | **Date:** | January 30, 2006 |

**Photograph No. 3**




Excavation of well MW-17 showing electrical conduit less than 6" from the well

**Photograph No. 4**



Picture of MW-19B showing SBC, electric, and sewer utilities

ALTON GEOSCIENCE

# BORING LOG

PROJECT: ARCO STATION 1919 BORING DATE: 02/12/92

LOCATION: 660 VIA DE LA VALLE, SOLANA BEACH BORING TYPE: 10-INCH HOLLOW-STEM AUGER

GEOLOGIST: J. GOODMACHER BORING NUMBER: B-11 / MW-11

APPROXIMATELY 10 FEET

DRILLING COMPANY: A AND R DRILLING ELEVATION: ABOVE MEAN SEA LEVEL

| DEPTH (feet) | I | BLOW COUNTS | MATERIAL ENCOUNTERED | USCS |
|---|---|---|---|---|
| 0 | | | THREE POST HOLES DRILLED TO 4 FEET BELOW GRADE. | |
| | | | Asphaltic Concrete (6 inches). | |
| | | | Moist, reddish brown (2.5YR 5/4), clayey, gravelly SAND (Fill). | SP |
| | | 12, 39, 41 | Damp, brownish yellow (10 YR 6/8), slightly silty, fine-grained SAND. | SP |
| | | | Damp, light gray (N7), fine- to medium-grained SAND. | SP |
| 5 | | | Sample B11-5.0. TLV = 50 ppm. | |
| | ++ | 7, 32, 38 | Damp, light gray (10YR7/1), slightly silty, fine-grained SAND. Sample B11-7.0. TPH < 5 ppm. | SP |
| | ▽ | | Damp, pink (7.5YR7/4), fine- to medium-grained SAND, with oxidized zones. Sample B11-8.0. TLV = 0 ppm. | SP |
| | | 10, 17, 26 | Damp, dark brown (7.5YR4/2), fine- to medium-grained SAND. | |
| | | | Wet, pink (7.5YR7/4), fine- to medium-grained SAND. | SP |
| | ++ | | Saturated, pink (7.5YR7/4), fine- to medium-grained SAND. | |
| | | | Saturated, gray (N5), silty, fine-grained SAND. Sample B11-9.5. TPH < 5 ppm. | SP |
| 10 | | 7, 18, 36 | Saturated, reddish yellow (7.5YR6/6 ), slightly silty, fine-grained SAND. | SP |
| | | | Rock in sampler. | |
| | | | Saturated, grayish brown (10YR5/2 ), slightly silty, medium- to coarse-grained SAND. | SP |
| | | 18, 34, 50 | Saturated, grayish brown (10YR5/2 ), slightly silty, medium- to coarse-grained SAND. Sample B11-12.5. TPH < 5 ppm. | SP |
| | ++ | | Damp, brownish yellow (10YR6/6 ), silty, very fine- to fine-grained SAND. Sample B11-12.5. TLV = 20 ppm. | SM |
| | | 22, 50 | Damp to moist, gray (10YR5/1), silty, very fine-grained SAND with some shells. Sample B11-15.0. TLV = 20 ppm. | SM |
| 15 | | | | |
| | | 11, 18, 34 | Saturated, brown (7.5YR5/2), medium- to coarse-grained SAND. | SP |
| | | | Saturated, gray (10YR5/1), silty, very fine-grained SAND with some pebbles. Sample B11-16.5. TLV = 20 ppm. | SM |
| | | | Total Depth = 17.0 feet below grade. Boring converted to Monitoring Well (MW-11). See Well Construction Diagram for details. | |

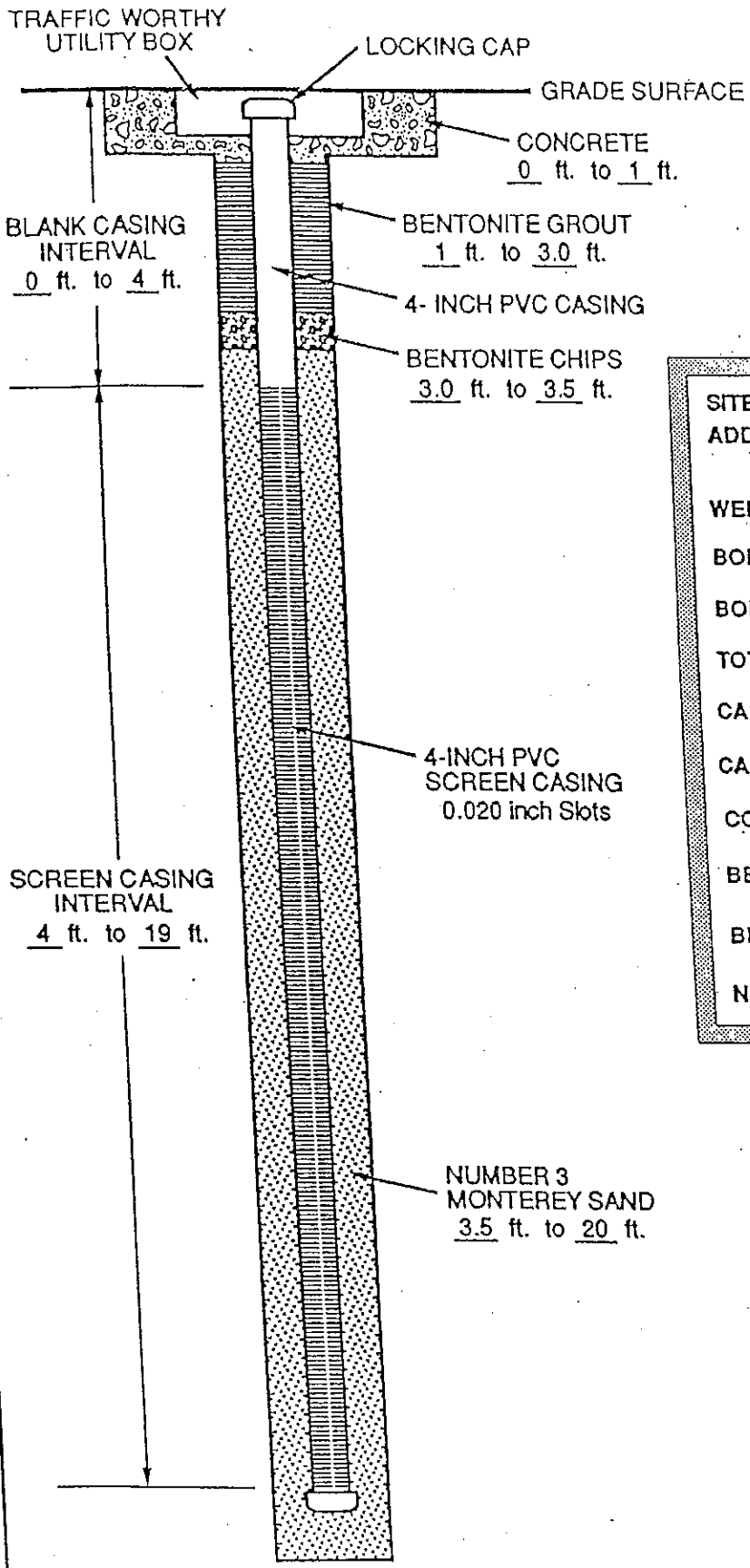
NOTES: TPH = total petroleum hydrocarbons
TRPH = total recoverable petroleum hydrocarbons
B = benzene
T = toluene
E = ethylbenzene
X = total xylenes
ND = not detected at laboratory detection limits
Well elevations are measured to top of casing.
Characters in parentheses represent Munsell color code designations.

ppm = parts per million
CGI/TLV = combustible gas reading
I = sampling interval
LEL = lower explosive limit
++ = sample analyzed for hydrocarbons
▽ = ground water piezometric surface



Total Depth = 17

# WELL CONSTRUCTION DETAIL




| | |
|---|---|
| SITE: | ARCO STATION 1919 |
| ADDRESS: | 660 Via de la Valle<br>Solana Beach, California |
| WELL NUMBER: | MW-17 |
| BORING DATE: | 7/22/92 |
| BORING DIAMETER: | 10 in. |
| TOTAL BORING DEPTH: | 20 ft. |
| CASING DIAMETER: | 4 in. |
| CASING/SCREEN DEPTH: | 19 ft. |
| CONCRETE: | 2 bags |
| BENTONITE GROUT: | 1 bag |
| BENTONITE CHIPS: | 0.5 bag |
| NUMBER 3 SAND: | 7 bags |

LEGEND

- CONCRETE
- BENTONITE GROUT
- BENTONITE CHIPS
- FILTER PACK (NUMBER 3 MONTEREY

NOTE: DRAWING IS NOT TO SCALE

600064-21-SC2 8-31-92

ALTON GEOSC
5764 PACIFIC CENT
SUITE 101
SAN DIEGO, CA 92

PROJECT NO.: 600064-52

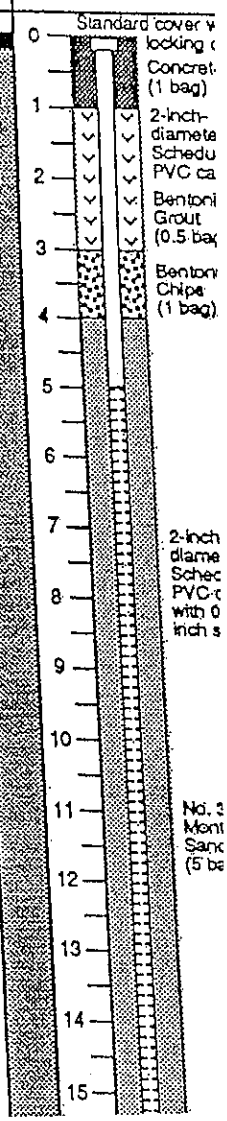
LOCATION: ARCO STATION 1919
660 VIA DE LA VALLE,
SOLANA BEACH, CALIFORNIA

DATE DRILLED: APRIL 13 1994
LOGGED BY: G. BUCKNER
APPROVED BY: R. KOFRON, CEG
DRILLING CO.: WEST HAZMAT DRILLING

DRILLING METHOD: 10-INCH-DIAMETER HOLLOW STEM AUGER
SAMPLER TYPE: 2-INCH-DIAMETER SPLIT-SPOON
TOTAL BORING DEPTH: APPROX. 16 FEET BELOW GRADE
ELEVATION: 16.82 FEET ABOVE MEAN SEA LEVEL
DEPTH TO GROUND WATER: APPROX. 10.5 FBG ON 4-13-94

| BLOWS PER 6 INCHES | CGI (ppm) | TPH (ppm) | SAMPLE | DEPTH (fbg) | DESCRIPTION | USCS | LITHOLOGY |
|---|---|---|---|---|---|---|---|
| | | | | 0 | Hand excavated to approximately 5 feet below grade. Asphaltic concrete 3 inches thick. | | |
| | | | | 1 | TORREY SANDSTONE. | | |
| | | | | 2 | Dense, moist, very pale orange (10YR 8/2), gravelly, cobbly, fine-grained SAND. | SP | |
| | | | | 3 | | | |
| | | | | 4 | | | |
| 75/5" | 20 | | | 5 | Very dense, moist, very pale orange (10YR 8/2), fine-grained SAND. | | |
| | | | | 6 | | | |
| | | | | 7 | | | |
| 10,18,21 | 15 | ND | | 8 | Dense, moist, very pale orange (10YR 8/2), fine-grained SAND, trace silt. Sample MW-19 - 8. | | |
| 60,13,40 | 20 | | | 9 | As above. | | |
| | | ND | | 10 | Sample MW-19 - 10. | | |
| 14,19,25 | >10,000 | | | 11 | Medium dense, wet, black (N1), fine-grained SAND, trace silt. Sample MW-19 - 11.5. | | |
| | | 5,763 | | | | | |
| 7,10,17 | >10,000 | 9,379 | | 12 | Medium dense, wet, black (N1), fine-grained SAND. Sample MW-19 - 12.5. B = ND, T = ND, E = 104 ppm, X = 428.5 ppm. | | |
| | | | | 13 | | | |
| | | | | 14 | | | |
| 32,50 | 20 | ND | | 15 | Very dense, wet, very pale orange (10YR 8/2), fine-grained SAND. Sample MW-19 - 15.5. | | |
| | | | | 16 | Refusal at 16. | | |
| | | | | 17 | | | |

WELL CONSTRUCTI DETAIL




MW-19B

ALTON GEOSCIENCE
San Diego, California

LOG OF EXPLORATORY BORING

MW-19

PAGE 1 OF

PROJECT NO.: 600064-52

LOCATION: ARCO STATION 1919
660 VIA DE LA VALLE,
SOLANA BEACH, CALIFORNIA

DATE DRILLED: APRIL 13 1994

LOGGED BY: G. BUCKNER

APPROVED BY: R. KOFRON, CEG

DRILLING CO.: WEST HAZMAT DRILLING

DRILLING METHOD: 10-INCH-DIAMETER HOLLOW STEM AUGER

SAMPLER TYPE: 2-INCH-DIAMETER SPLIT-SPOON

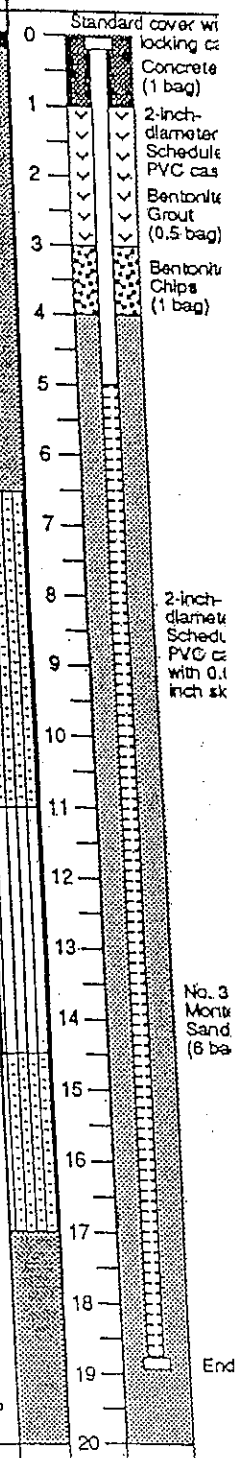
TOTAL BORING DEPTH: APPROX. 20 FEET BELOW GRADE

ELEVATION: 13.38 FEET ABOVE MEAN SEA LEVEL

DEPTH TO GROUND WATER: APPROX. 8 FBG ON 4-13-94

| BLOWS PER 6 INCHES | CGI (ppm) | TPH (ppm) | SAMPLE | DEPTH (fbg) | DESCRIPTION | USCS | LITHOLOGY |
|---|---|---|---|---|---|---|---|
| | | | | 0 | Hand excavated to approximately 5 feet below grade. Asphaltic concrete 3 inches thick. | | |
| | | | | 1 | Fill. | | |
| | | | | 2 | Medium dense, moist, very pale orange (10YR 8/2), fine-grained SAND. | SP | |
| | | | | 3 | | | |
| | | | | 4 | QUATERNARY ALLUVIUM. | | |
| 8,4,5 | | | | 5 | As above. | | |
| | | ND | | 6 | Sample MW-20 - 6. | | |
| 1,1,2 | | | | 7 | Loose, moist, moderate brown (5YR 4/4), silty SAND. | SM | |
| | | ND | | 8 | Sample MW-20 - 7.5. | | |
| | | | | 9 | As above, wet. | | |
| | | 2,593 | | 10 | Sample MW-20 - 9. | | |
| | | | | 11 | | | |
| | | | | 12 | | | |
| 3,3,4 | | | | 13 | Soft, wet, black (N1), SILT. | ML | |
| | | | | 14 | | | |
| 3,4,5 | | ND | | 15 | Loose, wet, light gray (N7), silty, fine-grained SAND. Sample MW-20 - 15. | SM | |
| | | | | 16 | | | |
| | | | | 17 | | | |
| | | | | 18 | | | |
| | | | | 19 | | | |
| 2,3,4 | | | | 20 | Loose, wet, light gray (N7), fine-grained SAND, with silt. | SP | |

WELL CONSTRUCTION DETAIL

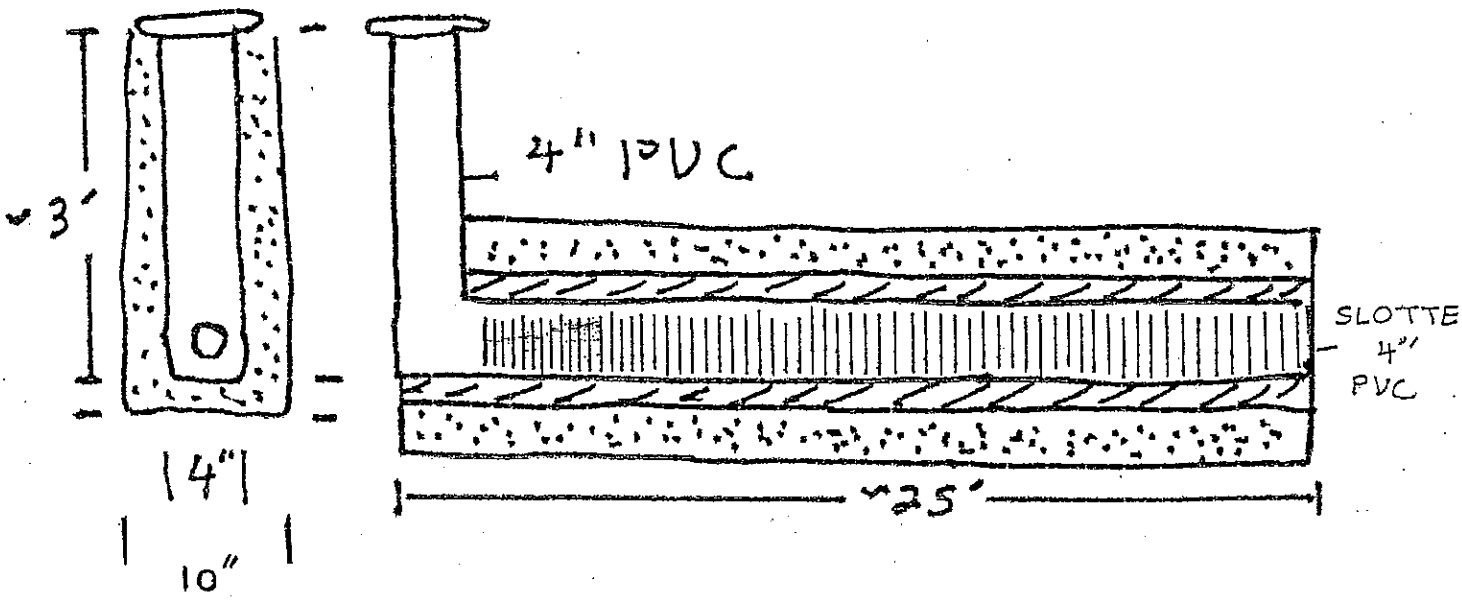



ALTON GEOSCIENCE
San Diego, California

# LOG OF EXPLORATORY BORING

MW-20

WELL SCHEMATIC FOR HORIZONTAL WELLS RT-1 THROUGH RT-5




- sand

- bentonite